



# Role of Dairy Farming to Double the Farmer's Income by 2025

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*Abstract: Livestock is an integral part of India's agricultural economy and plays a multifaceted role in providing livelihood support to the rural population. High genetic resources in India provide great opportunities of employment and income. Small dairy farmers are the backbone of India's milk production and play important role in positioned highest milk production. Dairy farming in India is an important way for farmers to increase their earnings and access to more nutritious food for their families. Organic dairy farming and integrated farming system supplement all other interventions in enhancing the returns to farmers.*

*Keywords: livestock, dairy, farmer, income.*

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## 1. Introduction

Animal husbandry is the most important component of Indian agriculture supporting livelihood of more than two-thirds of the rural population especially marginal, small and landless farmers (Singh *et al.*, 2018). There is immense scope in animal husbandry which can help in doubling farmer's income. In the case of livestock, improvement in herd quality, better feed, increase in artificial insemination, reduction in calving interval and lowering age at first calving are the potential sources of growth. In animal husbandry, the dairy sector has always played an



important role (Saxena *et al.*, 2002). Doubling farmer's income by 2025 is quite challenging but it is needed and is attainable. This is quite evident from the words of Nanda Kumar, Chairman National Dairy Development Board (NDDB) that "Doubling farmers' income is impossible without dairy farming. Dairy farming has become a commercial enterprise now and not only provides nutrition but also helps farmers to improve their economic condition and welfare. Major source of income for farmers is through sale of milk along with milk products and sale of dairy animals itself.

## 2. Current Dairy Scenario

Agriculture contributes 17 % of India's total gross domestic product (GDP) out of which livestock sector contributes highest, around 25.6% and thereby contributing 4.11 % to total GDP during 2012-13. The livestock sector is being considered as one of the promising sector for enhancing farmer's income. Dairying contributes significantly to the livestock sector in terms of share in gross value added and animal population. The dairy farming in India has shown remarkable development in the past decade and India has now become world largest producers of milk accounting for 20% of world production. In 2016-17 India producing 163.7 million tonnes of milk with the growth rate of 5.3 % providing per capita availability of 352 gram/day (BAHS, 2017). As per 19<sup>th</sup> livestock census India possesses about 118.59 million milch dairy animals, cattle and buffalo account for 37.28% and 21.23% of the livestock population with 190.90 and 108.70 million in numbers respectively. According to estimates of the Central Statistics Office (CSO, 2015-16), the value of output livestock sector at current prices was about 5,91,691 crore which is about 28.5% of the value of output from agricultural and allied sector. At constant prices the value of output from livestock is about 29% of the value of the output from total agriculture and allied sector (DAHDF, 2016-17). Within Livestock sub-sector, dairying constitutes the major share about 67% in value of outputs from agriculture (Jaiswal *et al.*, 2018). Livestock sector provides employment to 8.8% of population which largely comprises of landless and unskilled population.



### **3. Envisaged Dairy Industry by 2025**

The milk production envisaged to be 254.55 Million MT by 2021-22 and 300 Million MT by 2023-24 from existing 163.7 Million MT and will be requiring an annual growth rate of 9.2%. This would lead to increase in per capita availability of milk from current level of 352 grams/day to 515 and 592 grams/day in 2021-22 and 2023-24 respectively. To achieve the desired milk production targets, average In-milk animal productivity would also be required to grow annually at the rate of 4.7% to 6.14 Kg/day by 2021-22 and 6.7 Kg/day by 2023-24. It has been envisaged that by the end of 2021-22 and 2023-24 the surplus milk available with farmer will be 60% of total production (NAP vision 2022).

### **4. Significance of Dairy Farming in India**

India is not only the largest milk producer, but also is one of the fastest growing and lowest cost milk producers in the world. The characteristic feature of an Indian dairy industry is that it is rural based and large amount of milk production comes from small milk producers (Gangasagare and Karanjkar, 2009). Dairying in India is an occupation of small farmers and about half of the rural population own milch animals. More than 70 million rural households engaged in milk production, the majority being small and marginal farmers (Hemme *et al.*, 2015). It provides regular income to the livestock farmers through sale of milk. Nearly 70% of agriculture farmers double up as dairy farmers, and keep a large part of the milk they get for their own consumption (CII, 2017). Indian dairying has a large and growing domestic market in which the consumption of milk has been rising proportionate with increase in the purchasing power of people. As per 66th round of the NSSO, milk and milk product commanded a share of 7.6 % and 6.9% of consumer expenditure in rural and urban India respectively. Livestock in general and dairying in particular play a vital role in the Indian economy and also in the socio-economic development of millions of rural households.



## 5. Income of an Indian farmer

In India around 70% farmers are marginal (owning less than one hectare), and 77% of them earn even a miserable income of Rs.6,067 per capita a year (Paroda, 2018). Further, animal holding has been found to be more equitable as compared to land holding as 85% of the Indian farmers, who are marginal and small, own only 45% of farm land but 75% of bovines (Planning commission Report, 2007-2012). According to “Situation Assessment Survey”, the livestock sector contributes significantly to rural income about 26 % in case of the poorest households and about 12% in case of overall rural income. Doubling real income of farmers till 2022-23 requires annual growth of 10.41% in farmer’s income. As per NSSO (70th Round) for agricultural households, 63.5% income comes from cultivation, 3.7% from livestock, 1% from other agricultural activity, 4.7% from non-agricultural enterprises, 22% from salaried employment, 1.1% from pension, 3.3% from remittances and 0.7% from others. The economic Survey of India 2017-18 tabled in Parliament indicates that over a period of 10 years, the share of income of farmers from crop production increased by only 1% while it increased by 7% for livestock.

## 6. Drivers Enhancing Income from Dairy Farming

**6.1. Processed Milk Products:** Proper utilization of dairy-product has direct impact on the economy condition of the farmers. If the daily amount of fresh milk is limited, it is more economical to process the milk into less perishable products, store them and sale later in larger quantities. Generally the price of processed milk products is high as compared to raw milk. If a farmer is reluctant to sale the milk because of getting lower price then he can take initiative to sale processed dairy products such as ghee, paneer, curd, butter etc. Sometimes, there may not be availability of market nearby so in such cases sale of preserved products may bring greater financial gain.

**6.2. Increased Consumer:** Today the dairy world is serving over 7 billion consumers and providing livelihoods for approximately 1 billion people which either live on dairy farms



(Hemme *et al.*, 2015). The growing demand for milk and milk products offers opportunities for smallholders to enhance their income by increasing the efficiency of their milk production (Kumar *et al.*, 2014)

**6.3. Dairy Wastes:** Saving money is a kind of earning money. Cow dung has been considered as a Gold Mine, along with cow urine it can be used as fertilizer in the field of agriculture and energy resource to save money. Besides, cow dung can be used in making money from Panchgavya, Gau-mutra ark, various medicines and cosmetics. In addition to that government of India implemented Gobar Dhan scheme, the online trading of cow dung is one of the way to generate wealth from cow dung. These wastes are not just wastes, it adds to the economy of farmers to a large extent.

**6.4. Value Addition in the Dairy Sector:** According to the report of agriculture ministry of India (2017), only 20% of the total milk production is converted into value-added products (VAP) and the aim is to take this to 30% and the value-added products help generate 20% higher income. Further VAP bring in higher profits than raw milk which provides a window passing higher profitability to farmers in form of milk procurement price (NAP vision 2022).

**6.5. Organic Dairy Farming:** Organic dairy farming offers numerous opportunities for a developing country like India to increase the income of farmers and earn valuable foreign exchange through quality organic products. Total lactation yield, lactation length and 305 days milk yield were found to be high in organically managed buffaloes (Kamboj *et al.*, 2013) that eventually improve the income of dairy farmers.

**6.6. Integrated Farming System:** Integrated farming system which includes dairy sector not only helps in income generation but also provides nutritional security. Integrated farming system



provides farmers with immediate cash at the time of need and also during lean season of crop production.

**6.7. Silvopastoral System:** Silvopastoral systems are agroforestry systems that intentionally combine livestock production with rotational grazing. It has been reported that there was 80-130% increase in return after four year of silvopastoral system stabilization (Reyes *et al.*, 2017)

**6.8. Milk Cooperatives:** Milk production activity takes place on individual farms of different sizes in India. This characteristic of milk production system along with perishable nature of milk is a matter of great concern. In the interests of livelihood and economic well-being of the milk producers, it is essential to provide rural milk producers with greater access to the cooperative milk. The role of dairy cooperatives in procurement of milk and providing services to the farmers is remarkable as evident from the Gujarat Cooperative Milk Marketing Federation. The dairy farmers selling the milk to dairy cooperatives get fair price of their product. The cooperatives also provide financial security and give the money to farmers at certain intervals. Over 60% of close to 11 million farmer members in about 100,000 village milk cooperatives all over the country are small, marginal and even landless producers (Jaiswal *et al.*, 2018). Currently, on average producers pour about 2.8 litre of milk per day at dairy cooperative society and earns a gross income of Rs.85/day. However, feeding cost itself comprises of about 70% of the total milk price. Overall, farmer earns 20-30 % of milk price as net daily income which comes about Rs.516/month (NAP vision, 2022).

**6.9. Breeding Policy:** India has been made efforts to increase milk production through selection and cross-breeding of non-descript and low producing cattle with exotic germplasm. Door step delivery of artificial insemination as well as conservation and improvement of indigenous cattle and buffalo breeds has been improving productivity and cost efficiency in dairy farming and income of farmers.



**6.10. National Action Plan:** Government of India initiated National Action Plan to create infrastructure for handling of increased milk production to meet the demand of milk and milk products and help in achieving the objective of doubling the farmers' income.

**Target under action plan for dairy development and farmers income:**

Year		2016-17	2021-22	2022-23	2023-24
<b>Milk production (MMT)</b>		163.7	254.5	276.3	300.0
<b>Milk production from cattle and buffalo(MMT)</b>		162.8	245.6	266.6	289.4
<b>No. of bovine in milk(in Million)</b>		91.58	109.62	113.64	114.68
<b>No. of farmer member owning bovine(in million)</b>	<b>Cooperative</b>	16.08	19.29	20.01	20.75
	<b>Private</b>	6.45	13.60	15.03	16.44
	<b>Producer company</b>	0.40	1.20	1.40	1.50
	<b>Un organized</b>	57.07	45.91	43.56	41.31
	<b>Total</b>	80.00	80.0	80.0	80.0
<b>Milk yield/ animal/day(Litter)</b>		4.87	6.14	6.43	6.73
<b>Milch animal per farmer (in nos.)</b>		1.13	1.35	1.40	1.45
<b>Litter of milk/farmer/day</b>		5.58	8.41	9.13	9.91
<b>Marketable milk(52% of milk sold per farmer) (Litter/day)</b>		3.35	5.05	5.48	5.95
<b>Milk sold per farmer (Litter/month)</b>		100.38	151.37	164.33	178.40
<b>Procurement price (Rs./ Litter) ( SNF 9% and Fat 6%)</b>		33.80	43.14	45.29	47.56
<b>Sale price (Rs./ Litter) ( SNF 9% and Fat 6%)</b>		48.30	61.64	64.73	67.96
<b>Farmer income( @20% of procurement price) Rs./ Litter</b>		6.76	8.63	9.06	9.51
<b>Average income per month per farmer (Rs.)</b>		679	1306	1489	1697



**6.11. Increased Women's Economic Empowerment:** Women play a significant role in dairy production. They undertake a range of dairy management tasks, including feeding livestock, cleaning cowsheds, looking after calves, milking, milk processing and marketing. As per Agriculture situation in India (2017) the strength of women in Dairy has reached to the 70% of the total work force (about 44 lakh) of which 3,60,000 women are in leadership roles in village dairy cooperatives and 380 women on the boards of Union and State Federations.

**6.12. Livestock Extension Services:** The livestock extension services enable farmers to identify and analyse their production problems thereby increase income. It has been found that the net income has increased by 80% when farmers used livestock extension services (Dinani *et al.*, 2018).

## 7. Issues in Doubling Farmer's Income

Livestock diseases like FMD, BQ, HS and mastitis acts as negative influence on the production system results, low income. Mastitis is considered as major economic important disease in India, according to one study the total annual economic losses due to mastitis was calculated is 7165.51 crore rupees (Bansal and Gupta, 2009). Inadequate quantity and quality of feeds affects dairy farming system. As per estimate the deficit of dry fodder, concentrates and green fodder currently is 10, 33 and 35 % (Planning commission, 2012) respectively. Low productivity of milk animals, poor access to breeding, seasonality in production, limited use of manufactured cattle feeds, lack of good quality animal husbandry and farming practices, animal health and credit services and high cost of Artificial Insemination (AI) services are the other issues.

## 8. Conclusion

Dairying helps in rising income and employment among rural households. With a good strategy, well designed programmes, adequate resources and government initiatives, the country can achieve the goal of doubling farmer's income by the year 2025. Strong measures will be needed





to harness all possible sources of growth in farmer's income within as well as outside agriculture sector. Here dairy farming play a significant role in doubling farmer's income and it needs to maintain an annual growth rate of 5.3 % in milk Production. Farmers should be aware of recent technologies interventions and focus on keeping healthy animals for producing good quality and quantity of milk. Switching over to organic dairy farming and IFS is very good alternative for obtaining additional gains. In order to double the farmer's income at individual level, it is imperative that in-milk animal productivity is enhanced further, milk price paid to farmers also need to be raised and develop more cooperatives. Thus dairy farming has that untapped potential whose improvement can help achieving the target.

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